

IN THE CLAIMS

Please amend claims 1, 7, 13, and 19 as follows:

1. (CURRENTLY AMENDED) Apparatus for generating image data, comprising:  
memory means configured to store data defining a volume comprising a plurality of objects and at least one viewport, memory means configured to store motion data for each of said objects, configuration data for said viewport and instructions, and processing means configured by said instructions to perform the steps of:
  - (a) for each of said objects, independently defining said motion data in response to user input as a shutter length and a motion path within said volume, wherein said shutter length is indicative of a number of frames to use to evaluate motion for each of said objects;
  - (b) for each of said objects, calculating a position along said motion path at an interval of time, wherein said interval is dependent upon said shutter length for said object, and translating said object to said position within said volume;
  - (c) rendering said objects through said viewport to produce a sample;
  - (d) repeating steps (b) and (c) a user-defined number of times at different intervals to produce a number of samples, wherein said number of samples is independent from said shutter length; and
  - (e) blending said samples to generate an image frame wherein each of said objects is independently motion-blurred.
2. (ORIGINAL) Apparatus according to claim 1, wherein said motion path is defined by a continuous function.
3. (ORIGINAL) Apparatus according to claim 1, wherein said motion path is defined by a lookup table.
4. (ORIGINAL) Apparatus according to claim 1, wherein said configuration data for said viewport comprises a view frustum and a focal length.

5. (ORIGINAL) Apparatus according to claim 1, wherein for each of said objects said interval of time is a fraction of a frame.

6. (ORIGINAL) Apparatus according to claim 5, wherein for each of said objects said fraction of a frame is calculated by dividing said shutter length by said user-defined number.

7. (CURRENTLY AMENDED) A method for generating image frames from data defining a volume including a plurality of objects and at least one viewport, comprising the steps of

(a) for each of said objects, independently defining motion data in response to user input as a shutter length and a motion path within said volume, wherein said shutter length is indicative of a number of frames to use to evaluate motion for each of said objects;

(b) for each of said objects, calculating a position along said motion path at an interval of time, wherein said interval is dependent upon said shutter length for said object, and translating said object to said position within said volume;

(c) rendering said objects through said viewport to produce a sample;

(d) repeating steps (b) and (c) a user-defined number of times at different intervals to produce a number of samples, wherein said number of samples is independent from said shutter length; and

(e) blending said samples to generate an image frame wherein each of said objects is independently motion-blurred.

8. (ORIGINAL) A method according to claim 7, wherein said motion path is defined by a continuous function.

9. (ORIGINAL) A method according to claim 7, wherein said motion path is defined by a lookup table.

10. (ORIGINAL) A method according to claim 7, wherein said configuration data for said viewport comprises a view frustum and a focal length.

11. (ORIGINAL) A method according to claim 7, wherein for each of said objects said interval of time is a fraction of a frame.

12. (ORIGINAL) A method according to claim 11, wherein for each of said objects said fraction of a frame is calculated by dividing said shutter length by said user-defined number.

13. (CURRENTLY AMENDED) A computer readable medium having computer readable instructions executable by a computer, such that said computer performs the steps of:

- (a) defining image data as a volume including a plurality of objects and at least one viewport;
- (b) for each of said objects, independently defining a shutter length and a motion path within said volume in response to user input, wherein said shutter length is indicative of a number of frames to use to evaluate motion for each of said objects;
- (c) for each of said objects, calculating a position along said motion path at an interval of time, wherein said interval is dependent upon said shutter length for said object, and translating said object to said position within said volume;
- (d) rendering said objects through said viewport to produce a sample;
- (e) repeating steps (c) and (d) a user-defined number of times at different intervals to produce a number of samples, wherein said number of samples is independent from said shutter length; and
- (f) blending said samples to generate an image frame wherein each of said objects is independently motion-blurred.

14. (ORIGINAL) A computer-readable medium according to claim 13, wherein said motion path is defined by a continuous function.

15. (ORIGINAL) A computer-readable medium according to claim 13, wherein said motion path is defined by a lookup table.

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16. (ORIGINAL) A computer-readable medium according to claim 13, wherein said configuration data for said viewport comprises a view frustum and a focal length.

17. (ORIGINAL) A computer-readable medium according to claim 13, wherein for each of said objects said interval of time is a fraction of a frame.

18. (ORIGINAL) A computer-readable medium according to claim 17, wherein for each of said objects said fraction of a frame is calculated by dividing said shutter length by said user-defined number.

19. (CURRENTLY AMENDED) A computer system programmed to generate image data, including memory means configured to store data as a volume comprising at least one object and at least one viewport, memory means configured to store motion data for said object, configuration data for said viewport and instructions, and processing means configured by said instructions to perform the steps of

(a) for each of said objects, independently defining said motion data in response to user input as a shutter length and a motion path within said volume, wherein said shutter length is indicative of a number of frames to use to evaluate motion for each of said objects;

(b) for each of said objects, calculating a position along said motion path at an interval of time, wherein said interval is dependent upon said shutter length for said object, and translating said object to said position within said volume;

(c) rendering said objects through said viewport to produce a sample;

(d) repeating steps (b) and (c) a user-defined number of times at different intervals to produce a number of samples, wherein said number of samples is independent from said shutter length; and

(e) blending said samples to generate an image frame wherein each of said objects is independently motion-blurred.

20. (ORIGINAL) A computer system programmed according to claim 19, wherein said motion path is defined by a continuous function.

21. (ORIGINAL) A computer system programmed according to claim 19, wherein said motion path is defined by a lookup table.

22. (ORIGINAL) A computer system programmed according to claim 19, wherein said configuration data for said viewport comprises a view frustum and a focal length.

23. (ORIGINAL) A computer system programmed according to claim 19, wherein for each of said objects said interval of time is a fraction of a frame.

24. (ORIGINAL) A computer system programmed according to claim 23, wherein for each of said objects said fraction of a frame is calculated by dividing said shutter length by said user-defined number.